1. A process for joining at least two components of Ti material comprising:

interposing a Cu material on a welding face between said two components;

heating said two components and said Cu material to a welding temperature at which said Cu material is liquified;

maintaining said welding temperature for a sufficient time to permit a substantial diffusion of said Cu material into said two components; and

said substantial diffusion being sufficient to substantially remove liquid Cu material from said welding face by said diffusion of said Cu into said Ti material.

2. A process according to claim 1, wherein said welding temperature is one of an eutectic reaction temperature or more of Ti-Cu alloy and a reaction temperature or more of an intermetallic compound formed by said Ti and Cu materials.

3. A process according to claim 1, wherein said at least two components form a backing plate for a sputtering process.

4. A process according to claim 1, further comprising performing the step of heating in an atmosphere of one of a vacuum, an inert gas, and a reducing gas.

5. A process according to claim 1, wherein said Cu material is at least one of a Cu foil and a Cu powder.

6. A process according to claim 1, wherein the step of heating includes heating to a temperature of from about 887°C to about 1670°C.

7. A process according to claim 1, wherein the step of maintaining includes maintaining said welding temperature for at least 600 seconds.

8. A process for joining at least two components of Ti material comprising:

interposing a Zr material on a welding face between said two components;

heating said two components and said Zr material to a welding temperature at which said Zr material is liquified;

maintaining said welding temperature for a sufficient time to permit a substantial diffusion of said Zr material into said two components; and

said substantial diffusion being sufficient to substantially remove liquid Zr material from said welding face by said diffusion of said Zr into said Ti material.

9. A process according to claim 8, wherein said welding temperature is one of an eutectic reaction temperature or more of Ti-Zr alloy and a reaction temperature of an intermetallic compound formed by said Ti and Zr materials.

10. A process according to claim 8, wherein said at least two components form a backing plate for a sputtering process.

11. A process according to claim 8, further comprising performing the step of heating in an atmosphere of one of a vacuum, an inert gas, and a reducing gas.

12. A process according to claim 8, wherein said Zr material is at least one of a Zr foil and a Zr powder.

13. A backing plate produced by the process of claim 1.

14. A backing plate produced by the process of claim 8.

15. A process according to claim 5, wherein said Cu foil comprising a thickness of about 18 μm to about 60 μm.

16. A process according to claim 5, wherein said Cu foil comprising a thickness of about 18 μm to about 30 μm.

17. A process according to claim 5, wherein said Cu powder comprising a particle size diameter of about 25 μm to about 30 μm.